HOUSEHOLD CALENDAR.

A radio interview between Mrs. Rowena Schmidt Carpenter and Miss Mildred Porter, Bureau of Home Economics, delivered through WRC and 31 other stations associated with the National Broadcasting Company, Thursday, September 19, 1929, Eastern Standard Time.

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How do you do, Homemakers!

This is, as you know, the month set aside for programs on food preservation; in fact, September has been designated as National Food Preservation Month. For that reason and because we have been receiving so many letters in the Bureau about refrigeration problems, we decided to have as today's subject "Using the Temperature in a Good Refrigerator." Miss Mildred Porter who has been working on a study of household refrigeration in the Bureau of Home Economics for two years is with me to answer some of the questions that have come to us.

First of all, Miss Porter, will you tell us what points a housewife should look for in selecting a refrigerator?

MISS PORTER:

That is a difficult question to answer offhand Mrs. Carpenter. One point a housewife has to decide in choosing her refrigerator is the size, and another point in these days is whether she will get a mechanical or an ice refrigerator. Sometimes the same cabinet may be used either with ice or with a mechanical unit.

MRS. CARPENTER:

But, Miss Porter, isn't it true that many mechanical units are built in their own cabinets?

MISS PORTER:

Yes, Mrs. Carpenter, that is so, and I think it will be better to discuss with you first the qualifications of a good refrigerator cabinet, presumably one that is to be cooled with ice.

MRS. CARPENTER:

Can satisfactory temperatures be maintained with ice?

MISS PORTER:

Yes, provided you have a good box, properly constructed and kept well iced. You will find that a well insulated and well constructed box is an economy in the end, not only because it maintains good temperatures and thus preserves food

better, but also because it does this with less ice meltage, therefore decreasing the cost of operating. In choosing a box the homemaker must be governed by her pocketbook, which will determine the cost and type of the box and by the family needs which will determine the size. Refrigerators are ordinarily sold on the basis of ice capacity. This does not give the housewife much information because she is not interested so much in the amount of ice the box will hold as in the space available for food storage. It is really on the basis of food storage space that the homemaker should determine the size of the box she will purchase. Among the boxes that she finally considers, she should choose the best insulated one that she can afford, knowing that both amount and type of insulation are important. If possible, a box with at least two inches of good insulating material between the outside casing and the inside lining should be selected. The insulating material should be firm, a poor conductor of heat, should not settle, and should not absorb water.

MRS. CARPENTER:

Just why, Miss Porter, is insulation so important in selecting a refrigerator?

MISS PORTER:

Because the insulation prevents so much heat from the outside leaking into the box, and there is, therefore, a very definite relation between good insulation, low ice meltage, and low refrigerator temperature. The relation of the size of ice compartment to the food storage space should depend also upon insulation. If the box is well insulated and well constructed, a smaller ice compartment is possible for cooling. About one-third of the cubic contents, that is one-third of the inside space, should be given over to the ice compartment.

MRS. CARPENTER:

But just a minute, Miss Porter, since you lay such emphasis on insulation, let me ask how is the homemaker to find out about insulation, since it lies on the inside and cannot be seen?

MISS PORTER:

That is a good question, Mrs. Carpenter. Sometimes there is a label attached to the box that states the type of insulation. For instance, such a label may say, "two inches of cork board." Otherwise, the housewife has to rely upon the information which the dealer has and upon the honesty of the manufacturer. After determining as accurately aspossible the type and amount of insulation, the homemaker should examine the lining of the box, both as to the material used and the construction. It is very important that the lining should have a smooth, hard finish, made, if possible, with rounded corners, that there should be no cracks or crevasses in which food and moisture could accumulate, and that any seams should be tightly fitted and welded so that moisture from the inside cannot get into the insulation. As a matter of fact, many boxes are now made with a one-piece lining which is very easy to clean. The drain pipe should also be easy to clean because of its type of construction, finish, and the way it is attached. And, Mrs. Carpenter, the woman who is buying a refrigerator should be warned also to see that it has well-fitted doors that close very tightly because of little rubber strips called gaskets.

MRS. CARPENTER:

Thank you, Miss Porter, for covering so completely the points to consider in choosing an ice refrigerator. I think it might be well for me to summarize these briefly before asking you the next question:

(1) The homemaker selecting her refrigerator should consider the construction of the box she is selecting, its probable stability, and the amount and the type of insulation.

(2) She should consider the relation of the size of the ice compartment to the food storage space. About one-third of the inside of the refrigerator should be given over to the ice compartment.

(3) She should examine the lining of the box to see that it is smooth, hard, without cracks or poorly finished seams.

(4) She should know that the drain pipe will be easy to remove and to clean and that it fits well.

(5) She should be sure that the doors of the box will close very tightly.

So much for that. A little while ago, Miss Porter, you said that satisfactory temperatures could be maintained in an ice refrigerator. I wish you would tell us what you consider satisfactory for the refrigeration of foods. Much has been said about 50° F. Is this the right temperature?

MISS PORTER:

It is difficult to state just one temperature which the box should hold because some foods require lower temperatures than others. Milk, for instance, deteriorates very rapidly unless it is kept at a low temperature. We know from our work in the Bureau of Home Economics that if milk is to be stored more than twenty-four hours, it is wise to keep it at a temperature of 45° F., or below. Meat, especially uncooked meat, also requires a very low temperature. Certain other foods such as faw fruits and vegetables can be kept satisfactorily at a temperature of 50° F. or even higher. No ice box, even if properly constructed, holds one single temperature but rather has a range of temperatures. This range itself is not so important provided care is taken to place each food in the portion which has the temperature required for this particular food. To be more definite, cooked foods, butter, berries, and eggs should all be stored below 50° F. If any portion of the box does go above 50°F., it is important to place there the foods which do not deteriorate so rapidly at this temperature, such as the more solid fruits and the raw vegetables, with the exception of the salad materials which are better placed in a medium cold portion. A suitable distribution of food in the home refrigerator is shown in the charts just published by the Bureau.

MRS. CARPENTER:

I am sure, Miss Porter, that many of our listeners will want to order these charts on household refrigeration. In the meantime I wish you would tell us just where the coldest part of the refrigerator is, answering this question for

each type of box commonly in use, for instance, the old-fashioned ice chest that has just one compartment; the top icer with two compartments, one for ice and one for food; and the side icer with three doors and three compartments, one for ice and two for food.

MISS PORTER:

I should be very glad to do this, Mrs. Carpenter. The general rule is to look for the place where the cold air leaves the ice compartment, for this will be the coldest place. In what you term the old fashioned ice chest, consisting of only one compartment, the coldest place will be right against the ice. Of course very few people use this type of box now. In the so-called top icer with two compartments the coldest place is just <u>under</u> the ice, that is on the top shelf of the lower compartment. The coldest place in the side icer is again directly <u>under</u> the ice, in that small section which is usually called the milk compartment In this type of box, the next coldest place is the rest of the floor space of the refrigerator.

MRS. CARPENTER:

Another question, Miss Porter, which comes to us frequently. Is is possible to store in the same refrigerator those foods which have a decided flavor and odor, for instance, cantaloupes and milk and butter which are likely to take up food flavors. Will you answer this question, please?

MISS PORTER:

Yes, Mrs. Carpenter, it is quite possible to store milk and butter and also foods with decided flavors in the same box by placing them with due regard to the circulation of air in the box. In the side icer, for instance, the cold air drops down from the ice into the milk compartment, while the warmer air rises to the top in the other side of the box and then passes back to the ice. In such a box foods with distinct flavors and odors should be placed on the top shelf. These odors are deposited along with the condensing moisture on the outside of the ice, and so never reach the butter and milk if they are properly located. However, it is a wise precaution to cover these foods which absorb flavors so readily.

MRS. CARPENTER:

And now, Miss Porter, if you don't mind let us turn to some of the questions which are coming in such great numbers since electric and gas refrigeration have become so well known. For instance, here is a letter from a woman who owns a good refrigerator and wants to know if a mechanical unit can be installed in it.

MISS PORTER:

Yes, provided she has a really good refrigerator and can select a mechanical unit which fits into it satisfactorily. You should warn her that it is poor economy to put a mechanical unit in a box unless she is sure that the cabinet is well insulated and meets the other requirements of good construction which we discussed above. It is because so many refrigerators are poorly constructed that most of the manufacturers of mechanical units prefer to build their own cabinets.

MRS. CARPENTER:

We are frequently asked also, Miss Porter, which is the best type of mechanical refrigeration. The initial cost of mechanical refrigeration is so high that homemakers want advice before deciding the type to buy.

MISS PORTER:

I can scarcely answer that question specifically, Mrs. Carpenter, since a number of the units now on the market give equally good service. Our adivce usually is to get the one which is adapted in size and price to the needs of the family, but to ascertain carefully in advance whether or not similar boxes have performed satisfactorily in the community. It is especially important to get one which is handled locally by a person who can install and service it efficiently. I would further advise the homemaker in buying a mechanically cooled refrigerator to have the demonstrator test it by placing a series of thermometers on various shelves so that she can determine in advance where the coolest portion is and what temperature can be maintained there. You will remember that I said above that our work in the Bureau indicates that some portion of the refrigerator should maintain a temperature as low as 45° F. The location of foods recommended for the ice refrigerator holds true also for the mechanically cooled refrigerator.

MRS. CARPENTER:

Thank you, Miss Porter, for helping to solve so many of the refrigeration problems that homemakers have written to us. We have, as you know, been sending Farmers' Bulletin 1359, "Milk and Its Uses in the Home," and Farmers' Bulletin 1374, "Care of Food in the Home," in response to some of the questions, but these bulletins contain only a few statements about refrigeration. I am glad that the charts on household refrigeration can now be boughtfor twenty cents a set, from the Superintendent of Documents, Government Printing Office, Washington, because they answer a good many questions in a graphic and very understandable way.

And now goodbye, Homemakers, until next Thursday.